**The evaluation results of HMMs**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Signal** | **Protein** | **GA** | **Hmmsearch result** | | **QSP** | **Accuracy** | **Recovery** | **Character** |
| **Total** | **Objective** | **Objective** |
| HSLs | LuxI | 70 | 5229 | 5233 | 5399 | 0.999 | 0.969 | Synthesis |
| LuxM | 45 | 1051 | 1051 | 1051 | 1.000 | 1.000 | Synthesis |
| HdtS | 95 | 3019 | 3019 | 3258 | 1.000 | 0.927 | Synthesis |
| Lactonase | 35 | 13954 | 13955 | 13954 | 1.000 | 1.000 | Degradation |
| Acylase | 35 | 57116 | 57130 | 57116 | 1.000 | 1.000 | Degradation |
| LuxR | 35 | 139017 | 139235 | 139017 | 0.998 | 1.000 | Acceptation |
| LuxN | 250 | 85 | 99 | 97 | 0.859 | 0.876 | Acceptation |
| AI-2 | LsrA | 30 | 6097 | 6127 | 6097 | 0.995 | 1.000 | Transport |
| LsrC | 200 | 4286 | 4990 | 4562 | 0.859 | 0.940 | Transport |
| LsrD | 180 | 4385 | 4722 | 4620 | 0.929 | 0.949 | Transport |
| LsrG | 30 | 342 | 342 | 342 | 1.000 | 1.000 | Transport |
| LsrK | 25 | 8438 | 8438 | 8444 | 1.000 | 0.999 | Transport |
| LsrR | 30 | 3672 | 3673 | 3673 | 1.000 | 1.000 | Transport |
| LuxQ | 180 | 882 | 2627 | 1102 | 0.336 | 0.800 | Transport |
| LuxS | 35 | 20082 | 20082 | 20083 | 1.000 | 1.000 | Synthesis |
| LsrB | 35 | 7835 | 7838 | 7835 | 1.000 | 1.000 | Acceptation |
| LuxP | 30 | 626 | 626 | 626 | 1.000 | 1.000 | Acceptation |
| dCACHE | 20 | 7431 | 8516 | 18245 | 0.873 | 0.407 | Acceptation |
| DSF | RpfG | 110 | 1495 | 4340 | 1832 | 0.344 | 0.816 | Transport |
| RpfF | 30 | 6488 | 6488 | 6488 | 1.000 | 1.000 | Synthesis |
| RpfB | 30 | 403 | 403 | 407 | 1.000 | 0.990 | Degradation |
| RpfC | 170 | 471 | 551 | 745 | 0.855 | 0.632 | Acceptation |
| AHKs | CqsA | 55 | 1846 | 1855 | 1846 | 0.995 | 1.000 | Synthesis |
| CqsS | 185 | 166 | 196 | 182 | 0.847 | 0.912 | Acceptation |
| c-di-GMP | DGC | 25 | 400254 | 492343 | 400256 | 0.813 | 1.000 | Synthesis |
| PDE | 140 | 88175 | 154984 | 95982 | 0.569 | 0.919 | Degradation |
| Clp | 35 | 35 | 35 | 35 | 1.000 | 1.000 | Acceptation |
| PQS | PqsH | 50 | 247 | 252 | 252 | 0.980 | 0.980 | Synthesis |
| PqsD | 70 | 130 | 131 | 130 | 0.992 | 1.000 | Synthesis |
| PhnB | 30 | 1889 | 1889 | 1891 | 1.000 | 0.999 | Synthesis |
| PhnA | 30 | 2802 | 2802 | 2852 | 1.000 | 0.982 | Synthesis |
| PqsA | 295 | 248 | 268 | 271 | 0.925 | 0.915 | Synthesis |
| PqsB | 40 | 104 | 108 | 104 | 0.963 | 1.000 | Synthesis |
| PqsC | 565 | 118 | 146 | 122 | 0.808 | 0.967 | Synthesis |
| PqsE | 45 | 143 | 150 | 143 | 0.953 | 1.000 | Synthesis |
| PqsL | 50 | 297 | 304 | 297 | 0.977 | 1.000 | Synthesis |
| AqdC | 45 | 69 | 70 | 69 | 0.986 | 1.000 | Degradation |
| PqsR | 30 | 296 | 296 | 296 | 1.000 | 1.000 | Acceptation |